

CLAIMS:

1. A method of determining a position of a solidification point in a strand (1) during a continuous casting of liquid metals, in particular liquid steel, in which a strand (1) formed in a continuous casting mold (4) as a billet, ingot, bloom, preliminary section, thin slab, or slab strand, is displaced in support roller segments (5) with drive support roller pairs (6),

characterized in that

an indirect measurement of a movable amount of a core liquid volume per unit of length is carried out by direct measurement of generated process parameters by force and/or path signals (10) on fixed or adjustable individual support rollers (6a) or groups (7) of fixed or adjustable support roller pairs (7a), and, based on the measurement values, a calculation model (15) for a momentary position of the solidification point (1a) is produced, based on which, changeable casting parameters are continuously adjusted.

2. A method according to claim 1,

characterized in that

measurement signals are based on a local change of the strand thickness (1b).

3. A method according to claim 1,

characterized in that

measurement signals are based on a change of stop plug position (8) or a valve position in an intermediate receptacle (3) in front of the continuous casting mold (4).

4. A method according to claim 1,

characterized in that

measurement signals are based on changes of a melt level (9) in the continuous casting mold (4).

5. A method according to one of claims 1 through 4,

characterized in that

measurement signals are based on changeable volume of liquid metal that flows between an intermediate receptacle (3) and the continuous casting mold.

6. A method according to one of claims 1 through 5,

characterized in that

measurement signals are based on changes of clamping forces between support roller pairs (7a) or support roller segment sides (5a).

7. A method according to one of claims 1 through 6,
characterized in that
dependent on the calculation model (15), an automatic adjustment of a support roller segment (5) or an adjustable support roller (6a) is carried out.
8. A method according to one of claims 1 through 7,
characterized in that
a sequence of position or force changes in a same system direction on the strand (1) is undertaken from bottom upwards or in reverse.
9. A device for determining a position of solidification point (1a) in a strand (1) of liquid metal, in particular of liquid steel, with an intermediate receptacle (3), with a continuous casting mold (4) for a billet, ingot, bloom, preliminary section, thin slab, or slab strand format (4a), and with support roller segments (5) or roller pairs (6) with driven support rollers (6a),
characterized in that
there are provided signal transmitters (10) on the intermediate receptacle (3), in the continuous casting mold (4), in hydraulic piston-cylinder units (11) of the support roller segments (5) or of adjustable, free-running, or driven

individual rollers (6a), and which are connected with a central memory and data processing unit (12) in which measurement result are processed and a calculation model (15) is used for determining a momentary position of a core liquid volume inside still liquid strand (1).

10. A device according to claim 9,

characterized in that

a support roller segment (5) without independently adjustable, drive separate support roller (6a), on a loose side (13b), is adjusted, dependent on a position and width (1a) of a local and temporarily solidification point (1a), by two piston-cylinder units (11) spaced in a strand displacement direction (14) below or above at an angle to the strand displacement direction (14).

11. A device according to claim 9 or 10,

characterized in that

the independently adjustable, driven support roller pair (6) on a loose side (13b), in addition to adjustment of the mentioned above support roller segments (5) dependent on the position and the width (1c) of the local and temporarily solidification point (1d), is adjusted with a piston-cylinder unit (11).